WHAT IS CLAIMED IS:

Sub A2

1. An implantable medical device, comprising:

a. an implantable substrate carrier; and

b. a sensor member fabricated of at least one of a shape memory or a superelastic material coupled to the implantable substrate carrier.

2. The implantable medical device according to Claim 1, wherein the implantable substrate carrier is fabricated of a biocompatible material selected from the group of stainless steel, tantalum, gold, platinum, titanium, nickel, vanadium metal alloys thereof, nickel-titanium, elgiloy and combinations thereof.

3. The implantable medical device according to Claim 1, wherein the implantable substrate carrier consists essentially of a metal alloy.

4. The implantable medical device according to Claim 1, wherein the implantable substrate carrier consists essentially of a nickel-titanium alloy.

5. The implantable medical device according to Claim 2, wherein the sensor member consists essentially of a metal alloy.

6. The implantable medical device according to Claim 4, wherein the sensor member consists essentially of a nickel-titanium alloy.

7. The implantable medical device according to Claim 1, wherein the sensor member further comprises a plurality of cantilever members.

8. The implantable medical device according to Claim 7, wherein the plurality of cantilever members are fabricated of at least one of a shape memory material, a superelastic material, an elastically deformable material or a plastically deformable material.

9. The implantable medical device according to Claim 8, wherein the plurality of cantilever members have binary functionality having a first "off" position and a second "on" position.

10. The implantable medical device according to Claim 7, wherein the plurality of cantilever members are configured to have electromechanical response curves which shift upon a quantum of applied energy thereto.

11. The implantable medical device according to Claim 1, wherein the sensor member further comprises structural elements of the substrate carrier that are capable of altering a conformation of the implantable substrate carrier upon martensitic transformation of the at least one of a shape memory or a superelastic material.

12. An implantable medical device comprising an endoluminal prosthesis having at least one of a plurality of sensor regions integrally defined on at least one of a luminal or abluminal surface of the endoluminal prosthesis.

13. The implantable medical device according to Claim 12, wherein the endoluminal prosthesis is selected from the group consisting of stents, stent-grafts, grafts, valves, filters and occluders.

14. The implantable medical device according to Claim 12, wherein the endoluminal prosthesis and the at least one of a plurality of sensor regions further comprise a metal alloy selected from the group consisting of shape memory metal alloys, superelastic metal alloys, elastically deformable metals or plastically deformable metals.

15. The implantable medical device according to Claim 14, wherein the endoluminal prosthesis further comprises of a nickel-titanium alloy.

16. The implantable medical device according to Claim 14, wherein the at least one of a plurality of sensor regions further comprises a nickel-titanium alloy.

17. The implantable medical device according to Claim 14, wherein the at least one of a plurality of sensor regions further have a transition point different than a transition point of the endoluminal prosthesis.

18. The implantable medical device according to Claim 14, wherein the endoluminal prosthesis further comprises a plurality of wall elements, each of the plurality of wall elements further comprised of at least one shape memory or superelastic material, at least some of the plurality of wall elements being comprised of a first shape memory or superelastic material having a first transition point T_1 and at least some of the plurality of wall elements being comprised of a second shape memory or superelastic material having a second transition point T_2, wherein T_2 is greater than T_1.

19. The implantable medical device according to Claim 14, wherein the endoluminal prosthesis further comprises a plurality of wall elements; each of the wall elements being comprised of a laminate of at least two shape memory or superelastic materials, a first shape

memory or superelastic material having a first transition point T_1 and a second shape memory or superelastic material having a second transition point T_2, wherein T_2 is greater than T_1.

20. An implantable medical device comprising a substrate element fabricated of at least one of a shape memory and superelastic material, at least one transition point of the substrate element being capable of being induced by at least one of an endogenous energy stimulus selected from the group consisting of fluid pressure, fluid shear forces, body temperature, cellular binding and molecular binding, and exogenous energy stimulus selected from the group consisting of temperature, pressure, microwave, ultrasound, RF, ultraviolet, infrared, magnetic resonance, x-rays, beta and gamma irradiation.